COVID-19 Impacts on Beef Cattle Industry

Elliott Dennis
Dept. of Agricultural Economics
University of Nebraska – Lincoln
October 2020

https://farm.unl.edu/contributors/elliott-dennis
Demand: Food Service vs. Retail
RETAIL ALL FRESH BEEF DEMAND INDEX
Second Quarter, Using CPI 2000=100

Data Source: Bureau of Labor Statistics, USDA-ERS, Compiled & Analysis by LMIC
Livestock Marketing Information Center
RETAIL PRICE COMPARISON
Monthly

Cents Per Pound

Data Source: Bureau of Labor Statistics & USDA-ERS
Livestock Marketing Information Center
DOMESTIC U.S. CONSUMER SENTIMENT
Monthly, Index year 1966 = 100

Data Source: University of Michigan
Livestock Marketing Information Center

10/16/20
Meat Demand Monitor (MDM)  
*Tracks U.S. consumer preferences, views, and demand for meat*

<table>
<thead>
<tr>
<th>RETAIL</th>
<th>Ribeye Steak</th>
<th>Ground Beef</th>
<th>Pork Chop</th>
<th>Bacon</th>
<th>Chicken Breast</th>
<th>Plant-Based Patty</th>
<th>Shrimp</th>
<th>Beans and Rice</th>
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<tbody>
<tr>
<td>Feb-20</td>
<td>WTP ($/lb)</td>
<td>$16.35</td>
<td>$7.18</td>
<td>$6.11</td>
<td>$4.45</td>
<td>$7.43</td>
<td>$7.76</td>
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<tr>
<td>Mar-20</td>
<td>WTP ($/lb)</td>
<td>$15.89</td>
<td>$6.90</td>
<td>$5.74</td>
<td>$4.49</td>
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<td>WTP ($/lb)</td>
<td>$16.44</td>
<td>$7.72</td>
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<td>May-20</td>
<td>WTP ($/lb)</td>
<td>$15.45</td>
<td>$6.94</td>
<td>$5.87</td>
<td>$4.41</td>
<td>$6.90</td>
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<td>Jun-20</td>
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<td>$7.41</td>
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<td>$4.50</td>
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<table>
<thead>
<tr>
<th>FOOD SERVICE</th>
<th>Ribeye Steak</th>
<th>Beef Hamburger</th>
<th>Pork Chop</th>
<th>Baby Back Ribs</th>
<th>Chicken Breast</th>
<th>Plant-Based Patty</th>
<th>Shrimp</th>
<th>Salmon</th>
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<tr>
<td>Feb-20</td>
<td>WTP ($/meal)</td>
<td>$25.79</td>
<td>$18.88</td>
<td>$14.92</td>
<td>$17.69</td>
<td>$17.26</td>
<td>$13.31</td>
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<tr>
<td>Mar-20</td>
<td>WTP ($/meal)</td>
<td>$24.90</td>
<td>$18.39</td>
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<td>$17.53</td>
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<td>WTP ($/meal)</td>
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<td>$18.49</td>
<td>$17.57</td>
<td>$12.76</td>
<td>$17.06</td>
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<tr>
<td>Jun-20</td>
<td>WTP ($/meal)</td>
<td>$25.43</td>
<td>$18.69</td>
<td>$15.64</td>
<td>$18.35</td>
<td>$17.48</td>
<td>$12.63</td>
<td>$17.25</td>
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</tbody>
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Meat Demand Monitor (MDM)

Retail and Food Service Demand Indices

![Retail Beef and Pork Product, Demand Indices](chart1)

![Food Service Beef and Pork Meal, Demand Indices](chart2)
Beef Export Demand

Monthly U.S. Beef, Export Demand Index, Jan. 2010 (base) - present

- Jul-2020: 208.59
- Jun-2020: 161.76
- Jul-2019: 227.96
Supply: Cattle (Backup)
COMMERCIAL BEEF PRODUCTION
Weekly Average, By Month

Mil. Pounds

Data Source: USDA-NASS, Compiled by LMIC
Livestock Marketing Information Center
FEDERALLY INSPECTED CATTLE SLAUGHTER
Daily Average, By Month

Thou. Head

Data Source: USDA-NASS, Compiled by LMIC
Livestock Marketing Information Center
STEER SLAUGHTER
Federally Inspected, Monthly

Data Source: USDA-NASS
Livestock Marketing Information Center
HEIFER SLAUGHTER
Federally Inspected, Monthly

Thou. Head

Data Source: USDA-NASS
Livestock Marketing Information Center
COW SLAUGHTER
Federally Inspected, Monthly

Thou. Head

Data Source: USDA-NASS
Livestock Marketing Information Center
AVERAGE DRESSED WEIGHT -- STEERS
Federally Inspected, Monthly

Pounds

JAN  MAR  MAY  JUL  SEP  NOV

Data Source: USDA-NASS
Livestock Marketing Information Center
AVERAGE DRESSED WEIGHT -- COWS
Federally Inspected, Monthly

Data Source: USDA-NASS
Livestock Marketing Information Center
FED CATTLE MARKETINGS
US Total, Monthly

Mil. Head

Data Source: USDA-NASS
Livestock Marketing Information Center
CATTLE ON FEED OVER 90 DAYS
US Total, Monthly

Mil. Head

JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC

4.7  4.9  5.1  5.3  5.5  5.7  5.9  6.1  6.3  6.5  6.7  6.9

Avg. 2014/18  ...... 2019  ...... 2020

Data Source: USDA-NASS, Compiled by LMIC
Livestock Marketing Information Center
CATTLE ON FEED OVER 120 DAYS
US Total, Monthly

Mil. Head

Data Source: USDA-NASS, Compiled by LMIC
Livestock Marketing Information Center
Supply: economically feasible to hold production?
CORN BELT REGION
RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly

Data Source: USDA-NASS, Compiled & Analysis by LMIC
Livestock Marketing Information Center
CENTRAL ILLINOIS SOYBEAN MEAL (48%) PRICES
Weekly

$ Per Ton

Data Source: USDA-AMS
Livestock Marketing Information Center


G-P-07
10/22/20
DISTILLERS GRAIN PRICES
Nebraska, Weekly

$ Per Ton

Data Source: USDA-AMS
Livestock Marketing Information Center
IOWA ETHANOL PRICE
Weekly

$ Per Gallon

Data Source: USDA-AMS
Livestock Marketing Information Center
Historical Market Shocks: COVID-19
A matter of scale

**Packing plants role**

- Meat packing concentration a concern since original “big four” in 1860
- Prior to 1960, packing plants only harvested cattle
- Post 1960, packing plants broke down carcasses into “boxed products”
- GIPSA regulates plants with > 250 head capacity or more per day
- Branded products likely have increased packer margins

### CR4 Concentration

- Steers and Heifers: ~ 84%
- Cows and Bulls ~ 55%
- Boxed Beef ~ 80%

Various yearly GIPSA reports, 1980-2018

Policy and Industry Pushes

- COVID-19 resurfaced concerns about negotiated trade and packer concentration
- Historical perspective, ~7 major Government reports investigating packing industry and effects of concentration -> all happened after cattle prices collapsed
- Recent USDA government report...still investigating

Policy
1) Grassely Bill
2) Fisher Bill
3) PRICE ACT

Industry
1) ‘Bid the grid’
2) 75% rule (i.e. with minor/major triggers)
Market for Fed Cattle and Boxed Beef

Fed Cattle Market

Boxed Beef Market
COVID-19 Price Impacts

Changes in cattle/beef prices

![Graph showing changes in cattle/beef prices over time with peaks during COVID-19. The graph includes lines for Feeder Cattle, Live Cattle, and Boxed Beef (Choice).]
COVID-19 Damages

**Nebraska - Estimated Damage Impacts**

| Source: Authors calculations; based on estimates from Peel et al. (2020) and Tonsor (2020). Notes: Payments are reliant on where the share of the damage is incurred |
|---|---|---|---|---|---|
| Damages |
| 2020 Impacts ($) | 2020 + 2021 + 2022 ($) | $/head Damge | NE Inventory ('000) | Share of: | Notes: |
| 102,125,642 | 475,022,000 | 247.15 | 1,922 | 6% | US CALF SUPPLY |
| 176,968,658 | 271,966,000 | 159.98 | 1,700 | 6% | FEEDER SUPPLY |
| 618,065,815 | 535,496,000 | 205.96 | 2,600 | 18% | FEEDLOT SUPPLY |

897,160,116 | 1,282,484 | TOTAL DAMAGE TO NE |

11.35% | 9.42% | SHARE OF TOTAL SECTOR WIDE DAMAGE ESTIMATES
Historical Market Shocks: Comparing Events
Perfectly Competitive markets has (5) key assumptions:

1) Many buyers and sellers
2) No price discrimination
3) Free market entry and exit
4) Perfect market knowledge
5) Objective is to maximize profit

Most arguments are on whether these conditions actually hold

Comparing Events

_Not all market shocks are equal – Feeder Cattle_

![Graph showing the % change in Feeder Cattle Futures Price over trading days pre/post event. The graph includes lines for COVID-19, Holcomb, BSE, and Bomb Cyclone events.](image)
Comparing Events

*Not all market shocks are equal – Live Cattle*
Risk Management:
LRP Option for Smaller Producers
A Greater Need to Manage Risk
Differentiate the “When” from the “What”

**What triggers to pull**
- *Marketing Mechanisms*
  - Video/forward contract, cash/sale barn, futures/options, LRP
- *Diversification*
  - Background, precondition, retain ownership in feedlot

**When to pull the trigger**
- *Need to Know*
  - Cost of production
  - Breakeven’s
  - Price and volatility expectations
  - Production risk
What Triggers do Nebraska Cow-Calf & Feedlot Producers Pull to Manage Risk?

### Cow-calf

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Market Diversify</th>
<th>Price Protect</th>
<th>Market Diversify + Price Protect</th>
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<tbody>
<tr>
<td>Diversification</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pricing Tools</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Percent of Responses (%)</td>
<td>57.78</td>
<td>19.97</td>
<td>16.80</td>
<td>5.45</td>
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</tbody>
</table>

2016 NE Cow-Calf Survey (Kalkowski et al. 2019)

### Feedlots

<table>
<thead>
<tr>
<th></th>
<th>Average Percent Hedged per Feedlots (%)</th>
<th>Percent of Feedlots Surveyed (%)</th>
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</thead>
<tbody>
<tr>
<td>Feeder Cattle – Futures &amp; Options</td>
<td>55.0</td>
<td>48.3</td>
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<tr>
<td>Fed Cattle – Futures &amp; Options</td>
<td>61.5</td>
<td>86.2</td>
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<tr>
<td>Feed – Futures &amp; Options</td>
<td>44.1</td>
<td>75.9</td>
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</tbody>
</table>

2015 NE Feedlot Labor Survey (Brooks et al. 2016)
Livestock Risk Protection (LRP)

*Risk management tools for smaller producers*

- LRP is commonly referred to as “price insurance” for cattle

- Available in all counties across all states for:
  - Feeder Cattle Weight 1 (< 600 lbs.)
  - Feeder Cattle Weight 2 (600-900 lbs.)
  - Fed Cattle (> 900 lbs.)

- Operates like a (European) Put Option => “at/(out-of)-the-money”
  - Offered for 13, 17, 21, 26, 30, 34, 39, 43, 47 or 52-week periods

- **Producers remain subject to basis price risk**
**Current Coverage Levels and Subsidy Rates**

*Fed Cattle, Feeder Cattle, Swine*

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Subsidy (Previous)</th>
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<tbody>
<tr>
<td>95-100</td>
<td>35 (25): +10</td>
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<tr>
<td>90-94.99</td>
<td>40 (30): +10</td>
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<tr>
<td>85-89.99</td>
<td>45 (35): +10</td>
</tr>
<tr>
<td>80-84.99</td>
<td>50 (35): +15</td>
</tr>
<tr>
<td>70-79.99</td>
<td>55 (35): +20</td>
</tr>
</tbody>
</table>

- Increase head limits to:
  - Feeder Cattle – 6,000 head per endorsement/12,000 head annually
  - Fed Cattle – 6,000 head per endorsement/12,000 head annually
  - Swine – 40,000 head per endorsement/150,000 head annually

- Modify the livestock ownership requirement to 60 days

- Pay premium after endorsement period ended

- BF&R get additional 10% subsidy
USDA-Co-hosts Free Webinar on Nov. 12 on Livestock Risk Management

Speakers:
Greg Ibach, USDA Under Secretary for Marketing and Regulatory Programs
Bill Northey, USDA Under Secretary for Farm Production and Conservation
Brad Lubben, University of Nebraska-Lincoln and the North Central Extension Risk Management Education Center – introduction and moderator
Elliott Dennis, University of Nebraska-Lincoln – price risk management concepts, tools, and considerations
Brandon Willis, Ranchers Insurance (Utah) and former USDA Risk Management Agency Administrator – insurance products, sales, and service
Market Shocks and Risk Management

Elliott Dennis
Dept. of Agricultural Economics
University of Nebraska – Lincoln
October 2020
Historical Market Shocks:
Holcomb Fire
Holcomb Fire

**PRE-fire Situation**

![Supply Demand Analysis Diagram](image-url)
Holcomb Fire

POST-fire Reactions
Monthly Averages of Daily Plant Utilization for Federal Inspected Cattle Slaughter and Yearly State Plant Maximum Capacity, Jan 2019 to June 2020
Data Source: USDA-AMS (2020); Cattle Buyers Weekly (2020)
<table>
<thead>
<tr>
<th>Date</th>
<th>KS-NE</th>
<th>KS-IA/MN</th>
<th>KS-5Area</th>
<th>NE-IA/MN</th>
<th>NE-5Area</th>
<th>IA/MN-5Area</th>
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<tr>
<td>Jul 7, '19</td>
<td>-4.13</td>
<td>-4.03</td>
<td>-3.41</td>
<td>0.10</td>
<td>0.72</td>
<td>0.62</td>
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<td>-2.67</td>
<td>-2.09</td>
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<td>0.14</td>
<td>0.58</td>
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<td>-1.52</td>
<td>-0.28</td>
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<td>-2.00</td>
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<td>Sep 1, '19</td>
<td>-2.49</td>
<td>-5.22</td>
<td>-3.14</td>
<td>-2.73</td>
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<td>Sep 8, '19</td>
<td>-0.33</td>
<td>-4.09</td>
<td>-2.08</td>
<td>-3.77</td>
<td>-1.75</td>
<td>2.02</td>
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<td>Sep 15, '19</td>
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<td>-1.72</td>
<td>-0.98</td>
<td>-1.30</td>
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<td>-0.03</td>
<td>-0.01</td>
<td>0.03</td>
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<td>1.41</td>
<td>0.64</td>
<td>-0.77</td>
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<tr>
<td>Dec 8, '19</td>
<td>0.48</td>
<td>0.27</td>
<td>0.25</td>
<td>-0.21</td>
<td>-0.23</td>
<td>-0.01</td>
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<td>Dec 15, '19</td>
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<td>-0.34</td>
<td>-0.33</td>
<td>0.05</td>
<td>0.06</td>
<td>0.01</td>
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<tr>
<td>Dec 22, '19</td>
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<td>-0.41</td>
<td>-0.38</td>
<td>0.21</td>
<td>0.24</td>
<td>0.03</td>
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<tr>
<td>Dec 29, '19</td>
<td>0.02</td>
<td>-0.64</td>
<td>-0.34</td>
<td>-0.66</td>
<td>-0.36</td>
<td>0.30</td>
</tr>
</tbody>
</table>
Holcomb Fire

Changes in cattle/beef prices

-25.00
-20.00
-15.00
-10.00
-5.00
0.00
5.00
10.00
15.00
20.00

Jul 9, '19
Jul 19, '19
Jul 29, '19
Aug 8, '19
Aug 18, '19
Aug 28, '19
Sep 7, '19
Sep 17, '19
Sep 27, '19
Oct 7, '19
Oct 17, '19
Oct 27, '19
Nov 6, '19
Nov 16, '19
Nov 26, '19
Dec 6, '19
Dec 16, '19
Dec 26, '19

% Change in Price

Live Cattle
Feeder Cattle
Boxed Beef (Choice)

Percent Change in Live Cattle Futures, Feeder Cattle Futures, and Choice 600-900 lb. Boxed beef Prices Relative to Prices the Day of the Fire on August 9, 2019.
Data Source: USDA-AMS (2020)
How Unusual/Rare was 2019 Holcomb Fire?

CME Feeder Futures Prices from **1990 to 2019**

**P(Price October – Price March)**
- 60% of the time price is higher in March
- Largest price difference (-$31 in 2016, +62 in 2014)
- 2019 was -$11

**P(Price August – Price March)**
- 66% of the time price is higher in March
- Largest price difference (-$20 in **2019**, +37 in 2014)
Future (Policy) Shocks: Negotiated Trade
Negotiated Cash Trade

**Nebraska, Weekly**

- Negotiated
- Negotiated Grid
- Formula
- Forward Contract

**National, Weekly**

- Negotiated
- Negotiated Grid
- Formula
- Forward Contract
Suggested Remedy: Government Proposal #1

Grassley Bill

Proposed Senate Bill
May 13, 2020
https://mcusercontent.com/c35966bef9b816acff772766f/files/2abo16be-8492-49db-a86d-bf6e87548f4a/Mandatory_Negotiated_Cash_Trade_FINAL.pdf

“the covered packer shall slaughter not less than 50% of the quantity through spot market sales from nonaffiliated producers.” (pg. 4)
Suggested Remedy: Government Proposal #2

Fisher Bill

A BILL

To amend the Packers and Stockyards Act, 1921, to establish a cattle contract library, and for other purposes.

Proposed Senate Bill
September 22, 2020
https://www.fischer.senate.gov/public/_cache/files/bf98d4e6-4546-494a-8744-0a1d089a4da2/elt20632.pdf

“establish and maintain a library or catalog of each type of contract offered by packers to producers for the purchase of all or part of the production of the producers of fed cattle.” (p. 6)

“shall establish regional mandatory minimums for the purpose of enhancing price discovery and transparency for cattle market participants.” (p. 11)

“Packer purchase commitments, which shall be equal to the number of cattle, organized by cattle type, scheduled for delivery to a packer for slaughter for each of the next 14 calendar days” (pp. 12-13)
Suggested Remedy: Industry Proposal #1

“bid the grid”

“Bid-the-Grid” program which negotiates the formula base price using the Fed Cattle Exchange rather than a reported price (Nebraska average, 5-area average, etc.) that most formula arrangements use.
Suggested Remedy: Industry Proposal #2

Self regulation packer + feeder program

NCBA organization voluntary effort

8 minor triggers
- 4 regional negotiated trade
- 4 packer participation

Packer participation uncertain

Negotiated trade
- Must have 75% of robust trade in 75% of weeks in at least 3 of 4 rolling quarters
- 3 minor triggers = 1 major trigger

Source: NCBA (2020)